No. of Printed Pages : 3

BIMEE-010

B.Tech. – VIEP – MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination

00406

June, 2016

BIMEE-010 : MECHANICAL SYSTEM DESIGN

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **five** questions. All questions carry equal marks. Assume missing data, if any.*

1. (a) Discuss the approach of concurrent engineering with suitable examples.

(b) Explain the concept of time value of money with the help of a suitable example. 7+7

2. (a) Explain the essential features of state theory approach applied to systems analysis.

(b) Discuss the importance of systems approach. What factors have contributed to extensive usage of systems approach in resolving engineering problems ? 7+7

3. (a) Explain briefly the analytical methods of optimization and combinational optimization.

(b) Explain what is meant by preliminary need statement. How would this help in identifying the goals of design ? 7+7

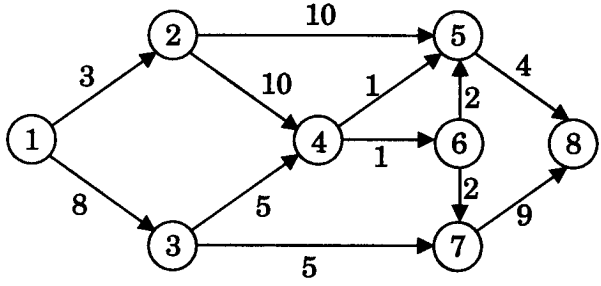
4. (a) Discuss the need of modelling for studying a system. How does it help in solving problems ?

(b) What is the significance of black-box approach in system analysis ? Explain briefly. 7+7

5. (a) Explain the component integration approach of system theory with the help of suitable examples.

(b) Explain the various steps involved in simulation of inventory control. 7+7

6. (a) Determine the maximum flow using a suitable algorithm for the given network.



(b) Describe the procedure for optimization of an insulated system with the help of a suitable example. 7+7

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Advantages of Systems Approach

(b) Expected Monetary Value

(c) Decision Process Approach

(d) Need of Modelling

(e) Decision-Making under Certainty